

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-119 (canceled).

Claim 120 (new). A bioreactor for cultivating and stimulating three-dimensional, vital and mechanically resistant cell transplants, the bioreactor comprising:

(i) a basic bioreactor body with a reactor lock connected thereto in a pressure-proof and sterile manner to define therein a reactor chamber,

(ii) said reactor chamber comprising (a) a support surface on a bioreactor floor for a three-dimensional transplant, which is obtained by mixing, suspending to homogeneity and hardening prepared cells with a bio-compatible and bio-degradable carrier structure, and (b) a permanent magnet comprising a mini actuator disposed in the bioreactor chamber situated above said transplant and acting as a vertically oriented and guided pressure applicator or stamp, which is moved vertically and contactless in the bioreactor chamber by externally disposed control and steering magnets, and

(iii) at least two hose coupling connectors for feeding and continuous perfusion of the transplant with a medium,

wherein the mini actuator with the magnetic core is encapsulated in a biologically inert enveloping body which has vertically oriented flow channels for exact vertical guiding and medium flow optimization at an edge of the enveloping body and fits with its external diameter exactly into the bioreactor chamber with low friction, whereby a diameter of the transplant, which is exactly medially positioned in the bioreactor chamber, is smaller than an external diameter of the magnetic mini actuator.

Claim 121 (new). The bioreactor of claim 120, wherein said control and steering magnet is medially situated in a vertical axis to and above the pressure stamp and moves upwards and downwards in relation to a polarity of the mini actuator resulting in an alteration of the pressure applied to the transplant.

Claim 122 (new). The bioreactor of claim 120, wherein said control and steering magnet comprises two permanent magnets with different vertical magnetic pole directions which are inserted in a rectangular shaped magnet holder and moved to a horizontal position above the bioreactor in a cyclic manner by means of a servomotor and a guide rail.

Claim 123 (new). The bioreactor of claim 120, wherein said control and steering magnet comprises a minimum of two permanent magnets with

different vertical magnetic pole directions, said permanent magnets being in a disk-shaped magnet holder and moved over the bioreactor in a cyclic manner as result of a rotation drive of a servomotor.

Claim 124 (new). The bioreactor of claim 123, wherein the bioreactor, which is firmly fixed in a horizontal position, approaches the permanent magnets of the control magnet via a vertical movement of the magnet holder by way of a step motor in order to increase a field effect and generate an application of higher pressures on the transplant.

Claim 125 (new). The bioreactor of claim 120, wherein said bioreactor chamber has at least two feed boreholes forming feed hose coupling connections and has at least two discharge boreholes forming discharge hose coupling connections.

Claim 126 (new). The bioreactor of claim 125, wherein said feed connections and said discharge connections communicating with said bioreactor chamber are fitted with a 3-way valve or a 4-way valve with a return function.

Claim 127 (new). The bioreactor of claim 126, wherein at least one of said discharge connections is formed with a sample taking section.

Claim 128 (new). The bioreactor of claim 120, wherein the bioreactor has a reactor floor of a completely or partially transparent material for monitoring a manufacturing of the transplant.

Claim 129 (new). The bioreactor of claim 120, which comprises a wide-meshed and light, fluid and gas permeable foil, a fleece, or a membrane of an antistatic or inert material disposed above the reactor floor of the bioreactor for positioning the transplant.

Claim 130 (new). The bioreactor of claim 120, wherein said magnetic core is oriented to cause a field generated thereby between the poles to run vertically to the transplant, with a magnetic north pole of said mini actuator oriented in an upward direction.

Claim 131 (new). The bioreactor of claim 120, wherein the mini actuator has a stamp surface oriented towards the transplant, said stamp surface is embossed with a grid structure for increasing a size of said stamp surface.